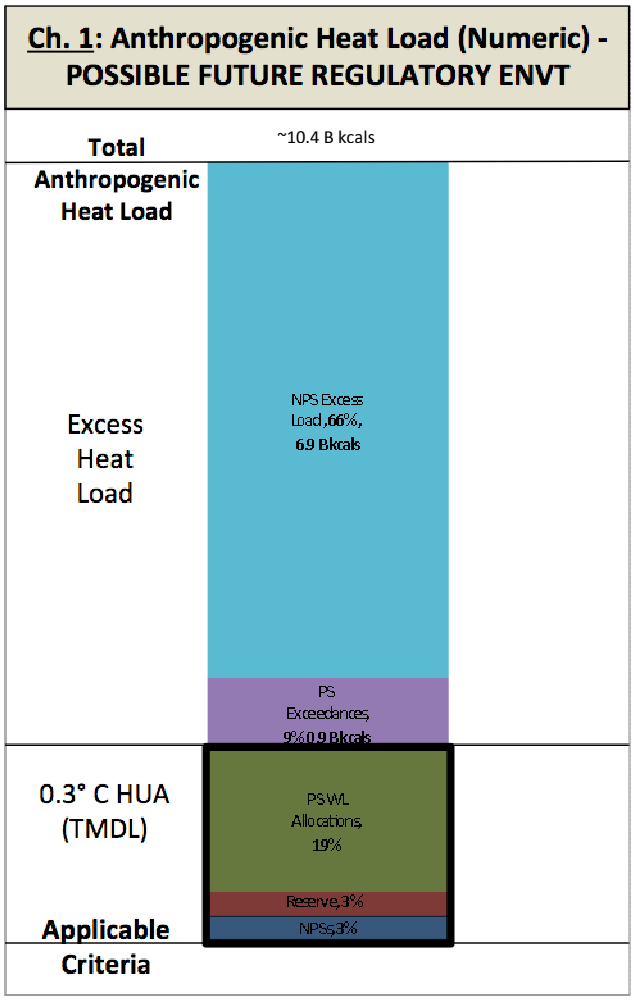
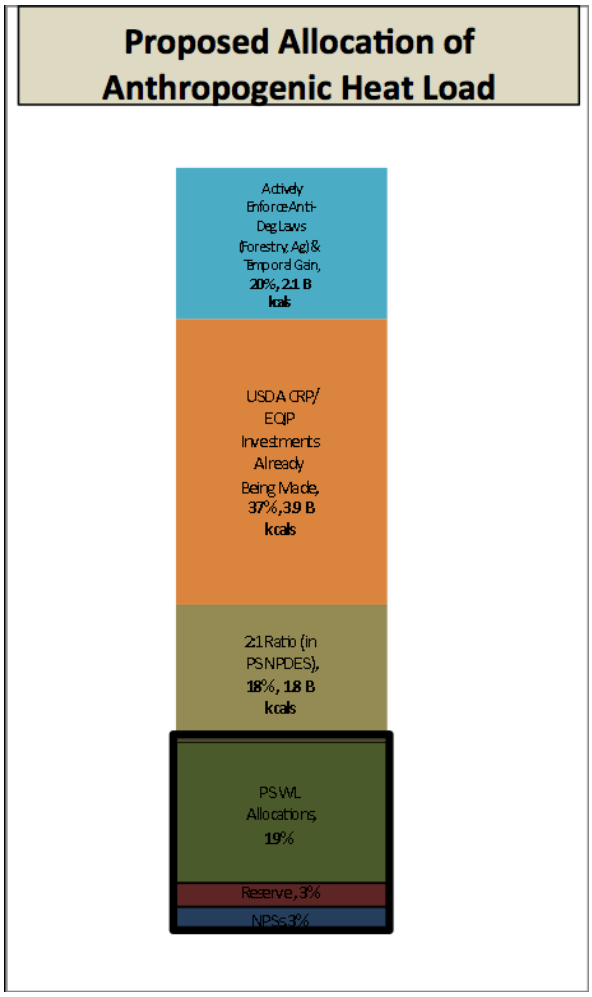
Summary of Current Situation – Oregon Example: These graphs represent the total human-caused heat load entering the main stem of the Willamette River near the river's point of maximum impact[1] at a numeric criteria level (Chart 1)—which is likely to be the future regulatory environment[2]—and as could be reflected in a future policy environment. This total load includes anthropogenic solar radiation (the solar loading resulting from human activities, such as deforestation and development, beyond the solar loading that would occur under "natural conditions") and cumulative point source loading. Human use allowance (0.3° C in Oregon)—which is allocated to point sources, nonpoint sources, and reserve in a TMDL—is subtracted from the total load, leaving the excess load (which is currently un-quantified and assumed to be met through reasonable assurance assumptions).





[1] In the Willamette Basin TMDL, the point of maximum impact occurs near river mile 115. The nearest up-stream complete data point in the TMDL is river 131. Oregon Dep't of Envtl. Quality, Temperature – Mainstem TMDL and Subbasin Summary (2006), *available at* http://www.deq.state.or.us/wq/tmdls/docs/willamettebasin/willamette/chpt4temp.pdf.

[2] Until recently, where ODEQ determined that a waterbody was naturally warmer than the relevant biologically based numeric standard, the applicable WQS was usually "natural conditions criteria" (NCC). Environmental groups successfully challenged EPA's approval of the NCC, and in effect, ODEQ's use of the NCC in its TMDLs and NPDES permits. *Nw. Envtl. Advocates v. U.S. E.P.A.*, 855 F.Supp.2d 1199 (D. Or. 2012). As a result of this litigation, ODEQ may need to rely on numeric criteria, which are usually lower than NCC, until a revised NCC is approved by EPA. Because numeric criteria are usually more restrictive than NCC, changing from NCC to numeric criteria has the effect of identifying a larger excess load (i.e. the load that is not quantified in the TMDL). Subsequent analysis in this document relies on numeric criteria to establish the total anthropogenic heat load.

With a trading ratio,[3] WQT can effectively address the point source portion of current excess load (purple portion in Chart 1, now covered by light brown portion in the second chart highlighting proposed allocation), and over time, start addressing a small portion of the nonpoint source excess load (light blue in Chart 1). Even with WQT at a trading ratio, over half of anthropogenic heat load remains unquantified (light blue, orange portions in the proposed allocation chart). A significant portion of this remaining load is addressed by USDA investments; it is, however, not measured in the same way as point source load, and so it is difficult to prove.

Benefits to Regulators:

1. Agencies that already spend money on agricultural BMP activities will receive credit for the funding resources already being applied;
2. These agencies will get a transparent, rigorous mechanism to document the nature of the expense;
3. Helps minimize the magnitude of regulation applied to farms and forestry that will be driven by local litigation in which federal nonpoint agencies are not participants.

[3] Oregon requires a point source engaged in WQT to purchase twice as many credits as its projected exceedance in 20 years. Oregon DEQ, Water Quality Trading in NPDES Permits Internal Management Directive (2009), *available at* http://www.deq.state.or.us/wq/pubs/imds/wqtrading.pdf.